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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.  | CONFIRMATION NO. |
|---|-------------|----------------------|----------------------|------------------|
| 10/018,436  | 10/29/2001  | Juergen Michel       | 112740-347           | 5192             |
| 29177   | 7590        | 05/27/2005           | EXAMINER             |                  |
| BELL, BOYD & LLOYD, LLC<br>P. O. BOX 1135<br>CHICAGO, IL 60690-1135 |             |                      | WILLIAMS, LAWRENCE B |                  |
|   |             |                      | ART UNIT             | PAPER NUMBER     |
|   |             |                      | 2634                 |                  |

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/018,436

Applicant(s)

MICHEL ET AL.

Examiner

Lawrence B. Williams

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 17-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-29, 31 and 32 is/are allowed.
- 6) ☐ Claim(s) 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/29/01, 12/16/02.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

### *Specification*

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### *Claim Objections*

3. Claim 31 is objected to because of the following informalities: Applicant has failed to identify the variable  $n$  as either  $n_1$  or  $n_2$  in the expression  $y(i) = x_2(i \bmod s + s^*(i \div sn))$ .  
Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 30 is rejected under 35 U.S.C. 102(e) as being anticipated by Popovic (US Patent 6,567,482 B1).

Popovic discloses a method for transmitting and receiving synchronization sequences, the method comprising the steps of; composing a synchronization sequence from two constituent sequences; repeating a first constituent sequence in accordance with the number of elements of a second constituent sequence; modulating all the elements of a specific repetition of the first constituent sequence with the corresponding element of the second constituent sequences; and mutually interleaving the repetitions of the first constituent sequence (col. 6, lines 36-64).

*Allowable Subject Matter*

6. Claims 17-29, 31-32 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: the instant application discloses a method for forming and/or determining a synchronization sequence, a synchronization method, and a transmitting and receiving unit. A search of prior art records has fail to teach a method for synchronizing a base station with a mobile station comprising the steps of: "forming at least one constituent sequence  $x_1$  or  $x_2$  in accordance with the following relationship from a third constituent sequence  $x_3$  of length  $n_3$  and a fourth constituent sequence  $x_4$  of length  $n_4$ :

$$x_1(i) = x_4(i \bmod s + s * (i \div sn_3)) * x_3((i \div s) \bmod n_3), i = 0 \dots (n_3 * n_4) - 1; \text{ or}$$

Art Unit: 2634

$x_2(i) = x_4(i \bmod s + s * (i \div sn_3) * x_3((i \div s) \bmod n_3))$ ,  $i = 0 \dots (n_3 * n_4) - 1$  as disclosed in claims 17, 26, and 27. Nor does the prior art teach a method for transmitting and receiving synchronization sequences in accordance with the formula

$y(i) = x_2(i \bmod s + s * (i \div sn)) * x_1((i \div s) \bmod n_1)$ ,  $I = 0, \dots (n_1 * n_2) - 1$  as disclosed in claim 31.

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Vayrynen discloses in US Patent 6,256,304 B1 Mobile Station Using Synchronization Word Order Information For Improved Channel Acquisition.

b.) Wang discloses in US Patent 5,805,646 Synchronization Method, And Associated Circuitry, For Improved Synchronization of A Receiver With A Transmitter Using Early-Late Testing During Coarse Synchronization.

c.) Langberg et al. Discloses in US Patent 5,748,686 System And Method Producing Improved Frame Synchronization In A Digital Communication System.

d.) Wang discloses in US Patent 5,751,774 Transmission System For Digital Audio Broadcasting.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).


Art Unit: 2634

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw  
May 18, 2005

  
**AMANDA T. LE**  
**PRIMARY EXAMINER**